REMARKS

I. Introduction

Claims 1 – 34 are pending in the application. The following are the outstanding issues in the application:

- Claims 1 – 30 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

- Claims 25 and 27 – 30 are objected to under 37 C.F.R. 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim.

- Claims 1 – 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 4,034,070 (filed Sept. 22, 1976, issued July 5, 1977) to Wojtowicz et al (hereinafter Wojtowicz) in view of United States Patent No. 4,938,945 (filed Oct. 18, 1988, issued Jul. 3, 1990) to Mahmood et al (hereinafter Mahmood) or in view of United States Patent No. 5,286,882 (filed Oct. 13, 1992, issued Feb. 15, 1994) to Zuzich et al (hereinafter Zuzich).

Applicants traverse the current rejections and respectfully request reconsideration and withdrawal of the rejections in light of the remarks contained herein.

II. Rejections under 35 U.S.C. § 112

Claims 1 – 30 are rejected under 35 U.S.C. § 112 as failing to comply with the written description requirement. Claim 1 recites, "preheat a predetermined weight of anhydrous metal to the predetermined reaction temperature ...." Examiner asserts, "Since claim 1 is generic to include metals that would react with HF acid either endothermically or exothermically, there is no sufficient support for the preheating step for the metal which would react exothermically with the HF acid." Office Action, page 3.

Applicants have amended claim 1 to recite endothermically reacting anhydrous metal with anhydrous hydrofluoric acid. The amendment has been made to overcome the current 35 U.S.C. § 112 and not in view of the applied art.

Examiner also asserts, "if only the metal is preheated, and when it is added to the HF acid, the combined temperature, which would be the initial temperature for the reaction, would be lower the temperature of the 'preheated' metal, thus, the 'preheated' metal could not be at the same temperature as the 'reaction temperature.'" Office Action, page 3. Applicants have amended claim 1 to recite setting the reaction vessel to a predetermined reaction temperature. *See* Specification paragraph [0034] (disclosing the claimed subject matter).

Additionally, Examiner asserts that the term "metal" in claim 1 is indefinite because the term in claim 1 is used to mean "metal compound" (note claim 3), while the accepted meaning is pure "metal" or possibly a "metal alloy." Applicants believe the term metal has been adequately defined in the specification. Specifically, in paragraphs [0004], [0005], [0008], [0036] and [0094], it is disclosed that the metal reactants may be elemental metal or a metal compound.

In view of the above, Applicants believe that the written description requirement with regard to claims 1 – 30 has been satisfied. Accordingly, Applicants respectfully request that Examiner withdraw the rejection, under 35 U.S.C. § 112, of claims 1 – 30.

III. Objections under 37 C.F.R. 1.75(c)

Claims 25 and 27 – 30 are objected to under 37 CFR § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants have amended claims 25 and 27 – 30 to depend from claim 31. Applicants believe claims 25 and 27 – 30 are now in proper dependent form. Accordingly, Applicants respectfully request that Examiner withdraw the objection, under 37 CFR § 1.75(c), of claims 25 and 27 – 30.

IV. Rejections under 35 U.S.C. § 103(a)

Claims 1 – 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wojtowicz et al in view of Mahmood or in view of Zuzich. The Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. M.P.E.P. § 2142; *In re Peehs*, 612 F.2d 1287, 204 USPQ 835, 837 (CCPA 1980). To establish a *prima facie* case of obviousness, three basic criteria must be met. M.P.E.P. § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). First, there must be some suggestion

or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *Id.* Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.* The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *Id.* For each rejected claim, Examiner has failed to satisfy , at least, the requirements that the applied art teaches all claim limitations. The rejections are discussed below.

A. Claims 1, 31 and 34

1. Applied art does not teach all limitations

Amended claim 1 recites, "preheat a predetermined weight of anhydrous metal to the predetermined reaction temperature . . . ." Examiner concedes that Wojtowicz does not specifically disclose the step of preheating the anhydrous metal. Office Action, page 7. To address the limitation missing from Wojtowicz, requiring preheating of the anhydrous metal, Examiner cites to Mahmood, col. 3, lines 23 – 26. *Id.* This portion of Mahmood provides, "[b]ecause the reaction is endothermic, a heated vessel may be utilized, although the application of heat usually is not required." This portion of Mahmood teaches heating the reaction vessel but does not teach or suggest the preheating of anhydrous metal. Thus, Mahmood does not teach the limitation in claim 1 requiring preheating a predetermined weight of anhydrous metal to the predetermined reaction temperature.

Furthermore, amended claim 1 requires introducing aliquots of the anhydrous metal into the anhydrous hydrofluoric acid in the reaction vessel at intervals. Similarly, amended claim 31 recites introducing aliquots of a metal reactant into hydrofluoric acid in the reaction vessel at intervals. Claim 34 requires introducing ferric trichloride into hydrofluoric acid in the reaction vessel at intervals.

In the discussion of these limitations, Examiner concedes that Wojtowicz does not teach "the step of adding anhydrous metal in steps." Office Action, page 7 – 8. Examiner then cites to Mahmood for teaching how the anhydrous metal is added. *Id.* However, in Mahmood, hydrofluoric acid is added to the metal compound. *See* Col. 3, lines 38 – 45

(stating, "Liquid HF, when added on top of the $FeCl_3$, forms a blanket which protects the reaction mass and especially the FeF_3 product from contact with oxygen or reactive agents such as atmospheric water." *See* Col. 3, lines 42-45). Because Mahmood teaches adding hydrofluoric acid to the metal compound already in the reaction vessel, Mahmood cannot teach the limitations of claims 1, 31 and 34 that require introducing the hydrofluoric acid into a reaction vessel and then introducing anhydrous metal or metal into the hydrofluoric acid at intervals. Thus, Examiner has not shown the applied art teaches all the limitations of claims 1, 31 and 34.

Examiner alternatively cites to Zuzich as teaching the limitation requiring introducing aliquots of the anhydrous metal into the reaction vessel at intervals until the entire predetermined weight of the anhydrous metal has been added. Office Action, page 8. Zuzich, as cited by Examiner, does not teach this limitation of claim 1 or the similar limitations in claims 31 and 34. Examiner asserts, "Zuzich '882 can be applied to teach that the reaction temperature in an exothermic reaction can be controlled by slowly adding the reactant. . . ." Office Action, page 8. The Examiner continues, "[s]uch teaching would be equally applied for an endothermic reaction because by slowly adding the reactant, the drop in the temperature due to the endothermic reaction would be more gradual and it would be easier to compensate to the temperature loss." *Id.* Examiner makes the latter statement without referring to any part of the applied art.

"When the PTO seeks to rely upon a chemical theory, in establishing a prima facie case of obviousness, it must provide evidentiary support for the existence and meaning of that theory." *In re Grose*, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979). *See also Application of Lunsford*, 53 C.C.P.A. 1011, 357 F.2d 385, 391, 148 U.S.P.Q. (BNA) 721, 725 (1966) (holding that "as a matter of law under 35 U.S.C. § 103, the examiner must substantiate his 'suspicions' on the basis of facts drawn from proper prior art."). Here, Examiner cites to steps taken in the teaching of an exothermic reaction that does not involve the production of metal fluorides. Examiner then makes a conclusion that the same teaching applies to an endothermic reaction used to produce metal fluorides without citing any basis for this theory. Appellants respectfully submit that this rejection based on Examiner's own theory, unsupported in the applied art, is not proper. Examiner, therefore, has not shown that the applied art teaches the limitation of claims 1, 31 and 34.

B. Claims 2-24, 26, 30, and 32-33

Claims 2-24 and 26 depend from claim 1, and claims 25, 27 – 30 and 32 – 33 depend from claim 31. Thus, claims 2-24 and 26 inherit the limitations of claim 1 and claims 25, 27 – 30 and 32 – 33 inherit the limitations of claim 31. As discussed above the applied art does not teach all the limitations of claims 1 or 31 and for at least this reason claims 2 – 30 and 32 - 33 are patentable. Moreover, claims 2-24, 26, 30, and 32 – 33 recite new and non-obvious limitations Examiner has not shown to be obvious in the Office Action. Accordingly, Applicants respectfully request that Examiner withdraw the rejections, under 35 U.S.C. § 103(a), of claims 2 – 30 and 32 – 33.

In sum, Examiner has not discharged the burden of establishing a prima facie case of anticipation of claims 1 – 34. Examiner, at least, has not shown that that the applied art teaches all claim limitations of the rejected claims. Accordingly, Applicants respectfully request that Examiner withdraw the rejections, under 35 U.S.C. § 103(a), of claims 1 - 34.

V. Summary

In view of the above, Applicants believe the pending application is in condition for allowance. Applicant believes no fee is due with this response. However, if a fee is due, please charge Deposit Account No. 06-2380, under Order No. 50715/P004US/10311738 from which the undersigned is authorized to draw.

Dated: May 4, 2007

Respectfully submitted,

By _____
Craig J. Cox
Registration No.: 39,643
FULBRIGHT & JAWORSKI L.L.P.
2200 Ross Avenue, Suite 2800
Dallas, Texas 75201-2784
(214) 855-7163
(214) 855-8200 (Fax)
Attorney for Applicant

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is e-filed on the date shown below.

Dated: May 4, 2007

Signature: _____
Lorraine Davidoff